Physical Therapy Department for Musculoskeletal Disorder and Its Surgery

Doctoral Degree
2014

Author	**:**	**Alaaeldin Abdelsattar Khaireldin**
Title	**:**	**Effects of Open Versus Closed Kinetic Chain Exercises During Tibial Distraction Osteogenesis By Ilizarov's Method**
Dept.	**:**	**Physical Therapy Department for musculoskeletal disorder and its Surgery.**
Supervisors	**1.**	**Khaled Elsayed Ayad**
	2.	**Gamal Ahmed Hosny**
	3.	**Aliaa Mohammed Rehan Youssef**
Degree	**:**	**Doctoral.**
Year	**:**	**2014.**
Abstract	**:**	

Muscle complications are not uncommon to arise during and/or after the distraction osteogenesis procedure using Ilizarov's fixator. Muscle weakness and/or contracture may persist, and hence, adversely affect patients' outcome. Although physiotherapy is an essential therapeutic and preventive measure against muscular complications, the effects of different exercises on muscle architecture, strength, and flexibility during distraction have not been studied systematically in humans, to compare the effects of open versus close kinetic chain exercises during tibial distraction osteogenesis by Ilizarov's method. Ten patients who underwent unilateral tibial lengthening by Ilizarov's method were enrolled in this study. Participants were randomly and equally assigned to one of two groups; Open kinetic chain exercise group and a closed kinetic chain exercise group. Exercise program was given every other day, for 4 weeks after starting distraction. In addition, all patients were taught a home exercise program. No significant differences were found within and between the two groups regarding Muscle Thickness and Pennation Angle in all tested positions ($p>0.05$); except for Pennation Angle in plantar flexion was greater in the closed kinetic chain group. Also, between groups' comparisons of muscle strength and flexibility showed non- significant differences. However, patients within the two groups showed significant improvement in muscle strength and flexibility. With the available number of patients, no evidence was found to support a difference between open and closed kinetic chain exercises with regards to muscle architecture, strength and flexibility.

Key words	**1.**	**Open Kinetic Chain Exercise**
	2.	**Closed Kinetic Chain Exercise**
	3.	**Distraction Osteogenesis**
	4.	**Ilizarov**
	5.	**Tibial Distraction Osteogenesis**
Classification number	**:**	
Arabic Title Page	**:**	**تأثيرات تمارين السلسلة الحركية المفتوحة مقابل تمارين السلسلة الحركية المغلقة في حالات اطالة عظمة القصبة بطريقة اليزاروف.**
Library register number	**:**	**3939-3940.**

Author	**:**	**Enas Metwaly Abd El-Menam**
Title	**:**	**A multimodal treatment versus individualized physical therapy program in treatment of cervical radiculopathy**
Dept.	**:**	**Physical Therapy Department for musculoskeletal disorder and its Surgery.**
Supervisors	**1.**	**Alaa Eldeen Abd Elhakem Balbaa**
	2.	**Aliaa Rehan Youssef**
Degree	**:**	**Doctoral.**
Year	**:**	**2014.**
Abstract	**:**	
Background: There are many physiotherapeutic programs to treat patients with cervical radiculopathy, with no program superior to others. The traditional management of those patients was mostly driven by the training of the individual clinician than the need of the patient. Purpose: To compare a multimodal versus individualized programs effects on pain, neck function and mobility in patients with unilateral C6-C7 cervical radiculopathy. Methods: Thirty patients were randomly assigned into (A) a multimodal group: fifteen patients with a mean age 40.8 (±6.15) who received manual therapy, intermittent traction and deep flexors strengthening, (B) an individualized treatment group:fifteen patients with a mean age 41.26 (±6.93)who received a program based on clinical decision algorithm that target specific relevant clinical signs and symptoms. Neck and arm pain severity, neck function and mobility were assessed using the numerical pain rating scale, the neck disability index and cervical range of motion device, respectively, before and after 4-weeks.Results:The multimodal and individualized physical therapy programs are effective in reducing neck and arm pain severity, improving neck mobility and function. However, the individualized treatment program showed significantly better results with regards to pain, function and patient's satisfaction (p<0.05). Conclusion: Individualized physical therapy programs are more effective in treating patients with cervical radiculopathy.		
Key words	**1.**	**Cervical Radiculopathy**
	2.	**multimodal treatment**
	3.	**Diagnosis**
	4.	**based clinical decision guide (DBCDG).**
Classification number	**:**	
Arabic Title Page	**:**	**برنامج علاج طبيعى متعدد الابعاد مقابل آخر فردي فى علاج اعتلال جذور الاعصاب العنقية**
Library register number	**:**	**3875-3876.**

Author	**:**	**Eslam Elsayed Ali Shohda**
Title	**:**	**Oral Versus Phonophoresis Administration of Glucosamine and Chondroitin in Treatment of Knee Osteoarthritis**
Dept.	**:**	**Physical Therapy Department for musculoskeletal disorder and its Surgery.**
Supervisors	**1.**	**Alaa Eldeen Abd Elhakem Balbaa**
	2.	**Khaled Elsayed Ayad**
	3.	**Ashraf Nehad Moharam**
Degree	**:**	**Doctoral.**

Year	**:**	**2014.**
Abstract	**:**	

The purpose of this study was to compare between the clinical outcomes of glucosamine and chondroitin phonophoresis (PH) and oral administration of chondroitin and glucosamine. A comparison was done between three groups of patients with knee osteoarthritis (OA). Group (A) received glucosamine, chondroitin, mentol and camphor in the form of gel administrated by PH and quadriceps muscle strengthening exercises. Group (B) received glucosamine and chondroitin administrated orally and mentol and camphor in the form of gel administrated by PH and quadriceps muscle strengthening exercises. Group (C) (control group) received infra-red, ultrasound (US) and quadriceps muscle strengthening exercises. Treatment outcomes were determined by: 1) Visual analogue scale (VAS) to measure pain intensity, Western Ontario McMaster Universities Osteoarthritis Index (WOMAC) to assess knee functional disabilities, Timed Up and Go Test (TUGT) to assess lower limb mobility and knee radiography to assess joint space width change. The results showed a statistically significant decrease in (VAS) score, a statistically significant decrease in knee (WOMAC) score and a statistically significant decrease in (TUGT) score for all groups (P< 0.05). Knee joint space width did not change in all groups. There was a statistically significant difference between groups (A) and (B) in (VAS) score in favor of group (A) (P< 0.05). There was no statistical difference between groups (A) and (B) in (WOMAC) score, (TUGT) score or knee joint space width (P>0.05). (VAS) score improved by 69.01% for group (A), by 44.69 % for group (B) and by 29.73 % for group(C). (WOMAC) score improved by 67.20 % for group (A), by 49.68 % for group (B) and by 29.81 % for group(C). (TUGT) score improved by 3.1 % for group (A), by 2.4% for group (B) and by 3.05 % for group(C). Conclusion: Glucosamine and chondroitin administrated by PH improve pain in patients with knee OA more than oral administration of glucosamine and chondroitin. No other significant difference was found between groups.

Key words	**1.**	**knee osteoarthritis**
	2.	**Visual analogue scale**
	3.	**Western Ontario.**
	4.	**Timed Up and Go Test**
	5.	**McMaster Universities Osteoarthritis Index**
	6.	**glucosamine and chondroitin**
Classification number	**:**	
Arabic Title Page	**:**	**إدخال الجلوكوزامين و الكوندروتين عن طريق الفم مقابل إدخاله بالموجات فوق الصوتية في علاج الالتهاب المفصلى العظمي للركبة**
Library register number	**:**	**3863-3864.**

Author	**:**	**Maha Mostafa Mohamed Mohamed**
Title	**:**	**Ischemic Compression Versus Kinesio Tape In Treatment Of Fibromyalgia Syndrome**
Dept.	**:**	**Physical Therapy Department for musculoskeletal disorder and its Surgery.**
Supervisors	**1.**	**Khaled El Sayed Ayad**
	2.	**Lilian Albert Zaky**
	3.	**Shereif Ahmed Khaled**
Degree	**:**	**Doctoral.**

Year	**:**	**2014.**
Abstract	**:**	

Background: Fibromyalgia Syndrome (FMS) is a syndrome of high socioeconomic impact that affects mainly women , characterized by diffuse musculoskeletal pain, and multiple tender points. Although its exact etiology is unknown, recently central sensitization is believed to play an important role in its development. Active myofascial trigger points (MTrPs) were proven to have a role in FMS central sensitization. Ischemic compression (IC) is commonly used manual technique in treatment of MTrPs. Kinesio tape (KT), although its wide clinical use, it still has little evidence to support its efficacy. Purposes of the study: This study was conducted to determine the short term effect of IC versus KT in treatment of FMS when they are applied on the active MTrPs of the upper trapezius muscle. Subjects: Twenty one female patients participated in this study, their age ranged from 21 to 43 years with a mean (30.9 ± 7.7) years . Methods: Patients were assigned randomly into two groups; Group (I): IC group, and Group (II): KT group. FMS tender points (TPs) pressure pain threshold (PPT), function, and neck pain were evaluated before, and during treatment and at one week after treatment, using pressure algometer, the fibromyalgia impact questionnaire (FIQ), and the visual analogue scale (VAS). Results: After treatment, both groups showed significantly improved function, and decreased neck pain. Comparing both groups revealed significant improvement in tender points PPT in favor of the IC group with no significant difference between both groups regarding function and neck pain. Conclusion: KT is effective as IC in relieving neck pain and improving function while the IC is superior to KT in improving tender points PPT in FMS with active MTrPs of the upper trapezius muscle.

Key words	**1.**	**Fibromyalgia Syndrome**
	2.	**Myofascial trigger points**
	3.	**Ischemic Pressure**
	4.	**Kinesio Tape**
Classification number	**:**	
Arabic Title Page	**:**	**الانضغاط الإقفارى مقابل شريط كاينزيو فى علاج متلازمة الألم العضلى الليفى**
Library register number	**:**	**3871-3872.**

Author	**:**	**Mohamed Ahmed Mossad Behiry**
Title	**:**	**The Combined Effect of Kinesio Tape And Lumbar Stabilizing Exercises In Treatment Of Chronic Mechanical Low Back Pain**
Dept.	**:**	**Physical Therapy Department for musculoskeletal disorder and its Surgery.**
Supervisors	**1.**	**Khaled El Sayed Ayad**
	2.	**Magdolin Mishel Samy Saad**
	3.	**Amgad Elsayed Matar**

Degree	**:**	**Doctoral.**
Year	**:**	**2014.**
Abstract	**:**	

Background Chronic mechanical low back pain (LBP) is the most common complaint of the working-age population and accounts for ranges between 60% and 90% of individuals in their life and is the leading cause of disability in people below the age of 45 years. Although kinesio tape (KT) has been theorized to be an effective treatment to restore muscle function and decrease pain and despite of being widely used in number of clinical conditions, the efficacy and scientific evidence to support its use and effects is still being established. Up till now, there is a need to evaluate if KT provides enhanced outcomes when added to physical therapy interventions with proven efficacy or when applied over a longer period.Purpose of the study: This study was conducted to evaluate the combined effect of KT and lumbar stabilizing exercises (LSE) on pain severity, function and trunk flexion range of motion (ROM) in patients with chronic LBP, in comparison with lumbar stabilizing exercises only. Subjects: Thirty patients with history of chronic mechanical LBP participated in this study, age ranged from 20 to 45 years. Methods: Subjects were assigned randomly into two groups; Group (I): LSE group, Group (II): combined KT and LSE group. Pain severity, function and trunk flexion ROM were measured pre-treatment and 8 weeks post treatment, using the visual analogue scale (VAS), Oswestry LBP disability questionnaire, modified-modified Schober method respectively. Results: Post treatment, there was a significant improvement in pain intensity, functional disability and trunk flexion ROM in both groups. Comparing both groups revealed significant difference in pain intensity and trunk flexion ROM in favor of combined KT and LSE group while there was no significant difference in functional disability between both groups(P<0.05). Conclusion: The combination of kinesio taping and lumbar stabilizing exercises in treatment of chronic mechanical LBP showed significant difference when compared with the lumbar stabilizing exercises program only regarding pain and trunk flexion ROM while it showed no difference in improving functional disability.

Key words	**1.**	**Chronic mechanical low back pain.**
	2.	**Kinesio Tape**
	3.	**lumbar stabilizing exercises**
Classification number	**:**	
Arabic Title Page	**:**	**التأثير المشترك لشريط كاينزيو وتمارين التثبيت القطنية فى علاج ألم أسفل الظهر الميكانيكي المزمن.**
Library register number	**:**	**3942-3943.**

Author	**:**	**Mohamed Raafat Atteya**
Title	**:**	**Efficacy of Suggested Rehabilitation Regimen versus Two Rehabilitation Programs After Flexor Tendons Repair of the Hand**
Dept.	**:**	**Physical Therapy Department for musculoskeletal disorder and its Surgery.**
Supervisors	**1.**	**Alaa Balba**
	2.	**Yasser El Safoury.**
Degree	**:**	**Doctoral.**

Year	**:**	**2014.**
Abstract	**:**	

Background: Flexor tendon injuries still remain a challenging condition to manage to ensure optimal outcome for the patient. The aim of rehabilitation after tendon repair is to achieve function but avoiding rupture of the tendon. There have been many publications presenting novel protocols but the ideal protocol is still under debate. Purpose: This study was conducted to investigate the functional outcome of the hand following repair and rehabilitation of a transected flexor tendon in zone II flexor. By comparing the effects of the suggested rehabilitation regimen, the Modified Kleinert protocol and the Duran protocol. Subjects: Forty five subjects age ranged from 30 to 50 years with repaired flexor digitorum profundus and superficialis tendons injury in zone II of the hand were randomly assigned into three groups, 15 patients in each group. Method: Group (A): treated by the Modified Kleinert protocol. Group (B): treated by the Duran protocol. Group (C): treated by the suggested rehabilitation regimen. Measurements of Fingers ROM, hand strength and hand function have been assessed at 6th, 9th and12th weeks post operatively. Results: there was significant improvement in all measured variables after treatment in groups (C) than group (A and B). Group (C) showed significant reduction in functional disabilities more than group (A and B), Group (C) showed significant improvement in fingers ROM and hand strength groups (A and B).Conclusions: The suggested rehabilitation regimen can assist in the identification of optimal tendon loading and/or excursion application, and can improve fingers ROM, hand strength and hand function more than the Modified Kleinert protocol and the Duran protocol.

Key words	**1.**	**Flexor tendon repair**
	2.	**flexor laceration**
	3.	**post-operative mobilization**
	4.	**tendon injuries**
	5.	**Hand.**
Classification number	**:**	**617.575.AME**
Arabic Title Page	**:**	**فاعلية برنامج تأهيلي مقترح مقابل برنامجين تأهليين بعد الإصلاح الجراحي للأوتار القابضة لليد.**
Library register number	**:**	**3743-3744.**

Author	**:**	**Reda Sayed Ahmed Mohamed Eweda**
Title	**:**	**Development Of A Clinical Prediction Rule To Identify Patients With Knee Osteoarthritis Likely To Benefit From Exercise**
Dept.	**:**	**Physical Therapy Department for musculoskeletal disorder and its Surgery.**
Supervisors	**1.**	**Alaa Eldin A. Balbaa**
	2.	**Waleid M. Abd El-Baki**
Degree	**:**	**Doctoral.**

Year	**:**	**2014.**
Abstract	**:**	
Background: knee osteoarthritis (OA) is a common disease affecting many large proportion of population all over the world and in our society. Many physical therapy approaches used to treat knee OA, there is high evidence that exercises are effective but still a great debate about which type is more effective and what are the possible factors that could affect the patient's response to exercise Purpose: to investigate the effect of body mass index (BMI), age, duration of symptoms, and pain severity on patient's response to closed kinetic chain exercises (CKC). Methods: Forty patients suffering from knee OA assessed by visual analogue scale (VAS) and functional tests (50 feet walk, timed up and go (TUG), and step tests) before and after exercise program of CKC exercises including (stationary bike, terminal knee extension, foreword, and lateral step up exercises) plus stretching exercises and pulsed faradic stimulation for six weeks. Results: The results showed that there were improvement in functional performance and reduction in pain intensity. Also the results showed that pain severity, BMI, and age can affect patient's response to CKC exercises. Conclusion: BMI, pain severity, and age were predictors of treatment success in patients suffering from knee OA treated with closed kinetic chain exercises.		
Key words	**1.**	**Closed kinetic chain exercise**
	2.	**Knee osteoarthritis**
	3.	**clinical prediction rule**
	4.	**Exercises.**
Classification number	**:**	
Arabic Title Page	**:**	**إنشاء قاعدة تنبؤ إكلينيكية لتحديد مرضى الالتهاب العظمى المفصلى للركبة المرجح أن يستفيدوا من التمارين.**
Library register number	**:**	**4021-4022.**

Author	**:**	**Tamer Mohamed Shousha**
Title	**:**	**Effect of Kinesio Taping of the Gluteus Medius Muscle on Treatment of Iliotibial Band Friction Syndrome**
Dept.	**:**	**Physical Therapy Department for musculoskeletal disorder and its Surgery.**
Supervisors	**1.**	**Alaadin A. Balbaa**
	2.	**Khaled El Sayed Ayad**
	3.	**Ahmed G. Al-Saied.**
Degree	**:**	**Doctoral.**
Year	**:**	**2014.**

Abstract	**:**	
Background:Iliotibial Band Friction Syndrome(ITBFS) is the primary cause of lateral knee pain in runnersand accounts for nearly 22% of all running injuries. Although kinesio tape (KT) has been theorized to be an effective treatment to restore muscle function and decrease pain and despite of being widely used in the athletic fieldو the efficacy and scientific evidence to support its use and effects is still being established.Still, there remains a need for clinical trials, in order to provide empirical evidence to support its reported clinical efficacy.Purposes of the study:This study was conducted to determine the efficacy of KT in treatment of ITBFS and to identify a definite relationship between hip abductor weakness and ITBFS. Subjects: Fifty patients participated in this study, age ranged from 18 to 30 years with a mean (21.74 ± 2.24) yearfree from hip and ankle injuries. Methods: Subjects were assigned randomly into two groups; Group (I): KTgroup, Group(II): Exercise group. Pain, lower limb functional performance and isokinetic hip concentric, eccentric, peak torques of the hip abductors and adductors at 30°/s were measured pre-treatment and 6weeks post treatment, using the visual analogue scale (VAS),single leg-hopping tests {single hopfor distance(SHD), triple hop for distance (THD),cross over hop (CHD) andtimed hop (TH)}, and the Biodex system 3 isokinetic dynamometer. Results: Post treatment, the KT group significantly increased the SLH, decreased the TH and VAS, while the exercise group significantly increased the SHD, CHD, THD, concentric and eccentric abductor/adductor ratios meanwhile, significantly decreased the TH and VAS. Comparing both groups revealed significant improvement in all variables in favor of the exercise group. Conclusion:Management strategies including hip abductor strengthening appeared to be beneficial in the treatment of ITBFS when compared to KT in decreasing pain intensity, improving lower limb functional performance and hip abductor /adductor ratios during hip concentric and eccentric contraction		
Key words	**1.**	**Iliotibial Band Friction Syndrome**
	2.	**Kinesio Tape**
	3.	**Hip Abductors**
	4.	**Therapeutic Exercises**
Classification number	**:**	**616.74.STE**
Arabic Title Page	**:**	**تأثير الربط المطاطي لعضلة الالية الوسطى في علاج متلازمة احتكاك الحرقف يةّ القصبيه.**
Library register number	**:**	**3653-3654.**